

Claims

[c1] What is claimed is:

1. A portable apparatus, the portable apparatus comprising:
 - a housing;
 - a socket installed on the housing for accommodating an add-on device, wherein the socket comprises a bottom formed in a horizontal direction; and
 - an ejecting mechanism installed in one side of the socket, the ejecting mechanism comprising:
 - an engaging part installed in one end of the socket by rotating along a pivot, wherein the engaging part comprises a first port and a second port respectively installed in opposite sides of the pivot;
 - a connecting port installed in another end of the socket opposite to the engaging part so that the second port and the connecting port are respectively installed in the opposite ends of the bottom;
 - a flexible band installed along the horizontal direction, wherein one end of the flexible band is connected to the second port of the engaging part, and another end of the flexible band is connected to the connecting port; the flexible band comprising a contact face that is installed

between the two ends of the flexible band; the add-on device comprising a joint face corresponding to the contact face;

wherein when the add-on device is installed inside the socket, a position of the joint face of the add-on device corresponds to position of the contact face of the flexible band, and when the first port of the engaging part is pushed toward the socket, the engaging part will rotate along the pivot to make the second port push outward from the socket and to straighten the flexible band so that the contact face of the flexible band moves upward along a vertical direction and the add-on device will be ejected from the bottom along the vertical direction.

- [c2] 2. The portable apparatus of claim 1 further comprising:
 - a second engaging part installed in one end of the socket by rotating along a second pivot so that the engaging part and the second engaging part are respectively installed in the opposite end of the bottom, wherein the second engaging part comprises a third port and a fourth port that are respectively installed in opposite sides of the second pivot, and the fourth port is the connecting port;
 - wherein when the first port and the third port are pushed toward the socket at the same time, the second engaging part will rotate along the second pivot to make the

fourth port move outward from the socket and the flexible band is straightened so that the contact face of the flexible band moves upward.

- [c3] 3. The portable apparatus of claim 1 further comprising: a second flexible band installed along the horizontal direction, wherein one end of the second flexible band is connected to the first port, and another end of the second flexible band is connected to the third port; when the first port and the third port are pushed toward the socket at the same time, the second flexible band will be compressed and generate a reverse force to push the first port and the third port outward from the socket.
- [c4] 4. The portable apparatus of claim 1 further comprising: a third port installed in the other end of the socket opposite to the engaging part so that the first port and the third port are respectively installed in the opposite ends of the bottom; and a second flexible band, installed along the horizontal direction, wherein one end of the second flexible band is connected to the first port, and another end of the second flexible band is connected to the third port; when the first port is pushed toward the socket, the second flexible band will be compressed and generate a reverse force to push the first port outward from the socket.

- [c5] 5. The portable apparatus of claim 1 wherein the second port further comprises a main embedding part, and a deputy embedding part is installed in the corresponding position of the add-on device; when the add-on device is installed inside the socket, the main embedding part is embedded with the deputy embedding part to fix the add-on device inside the socket; when the first port is pushed toward the socket to make the second port move outward from the socket, the main embedding part will be aroused to separate from the deputy embedding part.
- [c6] 6. The portable apparatus of claim 5 wherein the main embedding part is a bulge hook installed in the second port, and the deputy embedding part is a corresponding socket.
- [c7] 7. The portable apparatus of claim 5 wherein the deputy embedding part has a convex shape, and the main embedding part is a socket installed in the second port.
- [c8] 8. The portable apparatus of claim 1 wherein the socket further comprises a main embedding part, and the add-on device further comprises a deputy embedding part; when the add-on device is installed inside the socket, the main embedding part is embedded with the deputy embedding part to fix the add-on device inside the socket; when the first port is pushed toward the socket

to make the second port move outward from the socket, the main embedding part will be aroused to separate from the deputy embedding part.

- [c9] 9. The portable apparatus of claim 1 wherein the portable apparatus is a mobile phone, and the add-on device is a battery for providing power supply for operations of the portable apparatus.
- [c10] 10. The portable apparatus of claim 1 wherein the portable apparatus is a notebook, and the add-on device is a battery for providing power supply for operations of the portable apparatus.
- [c11] 11. A portable apparatus, the portable apparatus comprising:
 - a housing;
 - a socket installed on the housing for accommodating an add-on device, wherein the socket comprises a bottom formed in a horizontal direction; and
 - an ejecting mechanism installed in one side of the socket, the ejecting mechanism comprising:
 - an engaging part installed in one end of the socket by rotating along a pivot, wherein the engaging part comprises a first port and a second port respectively installed in opposite sides of the pivot;
 - a connecting port installed in another end of the socket

opposite to the engaging part so that the second port and the connecting port are respectively installed in the opposite ends of the bottom; a flexible band installed along the horizontal direction, wherein one end of the flexible band is connected to the second port of the engaging part, and another end of the flexible band is connected to the connecting port; the flexible band comprises a contact face that is installed between the two ends of the flexible band; the add-on device comprises a joint face corresponding to the contact face; wherein when the add-on device is installed inside that socket, a position of the joint face of the add-on device corresponds to position of the contact face of the flexible band; when the first port of the engaging part is pushed toward the socket, the engaging part will rotate along the pivot to make the second port push outward from the socket and the flexible band will be compressed to bend along a vertical direction so that the contact face of the flexible band moves upward along the vertical direction and the add-on device will be ejected from the bottom along the vertical direction.

[c12] 12. The portable apparatus of claim 11 further comprising:
a second engaging part installed in one end of the

socket by rotating along a second pivot so that the engaging part and the second engaging part are respectively installed in the opposite end of the bottom, wherein the second engaging part comprises a third port and a fourth port that are respectively installed in opposite sides of the second pivot, and the third port is the connecting port; wherein when the first port and the third port are pushed toward the socket at the same time, the first port and the second port will compress the flexible band at the same time so that the contact face of the flexible band moves upward.

- [c13] 13. The portable apparatus of claim 11 further comprising a second flexible band installed along the horizontal direction, wherein one end of the second flexible band is connected to the second port, and another end of the second flexible band is connected to the fourth port; when the first port and the third port are pushed toward the socket at the same time, the second port and the fourth port will be pushed outward from the socket to stretch the second flexible band.
- [c14] 14. The portable apparatus of claim 11 further comprising:
 - a fourth port installed in the other end of the socket opposite to the engaging part so that the second port and

the fourth port are respectively installed in the opposite ends of the bottom; and a second flexible band, installed along the horizontal direction, wherein one end of the second flexible band is connected to the second port, and another end of the second flexible band is connected to the fourth port; when the first port is pushed toward the socket, the second port will be pushed outward from the socket to stretch the second flexible band.

- [c15] 15. The portable apparatus of claim 11 wherein the second port further comprises a main embedding part, and a deputy embedding part is installed in the corresponding position of the add-on device; when the add-on device is installed inside the socket, the main embedding part is embedded with the deputy embedding part to fix the add-on device inside the socket; when the first port is pushed toward the socket to make the second port move outward from the socket, the main embedding part will be aroused to separate from the deputy embedding part.
- [c16] 16. The portable apparatus of claim 15 wherein the main embedding part is a bulge hook installed in the second port, and the deputy embedding part is a corresponding socket.

- [c17] 17. The portable apparatus of claim 15 wherein the deputy embedding part has a convex shape, and the main embedding part is a socket installed in the second port.
- [c18] 18. The portable apparatus of claim 11 wherein the socket further comprises a main embedding part, and the add-on device further comprises a deputy embedding part; when the add-on device is installed inside the socket, the main embedding part is embedded with the deputy embedding part to fix the add-on device inside the socket; when the first port is pushed toward the socket to make the second port move outward from the socket, the main embedding part will be aroused to separate from the deputy embedding part.
- [c19] 19. The portable apparatus of claim 11 wherein the portable apparatus is a mobile phone, and the add-on device is a battery for providing power supply for operations of the portable apparatus.
- [c20] 20. The portable apparatus of claim 11 wherein the portable apparatus is a notebook, and the add-on device is a battery for providing power supply for operations of the portable apparatus.